

CHAPTER 5

LANDSCAPING

5-1. General. Areas selected for recreation development may possess outstanding natural features of earth, rock, water, or plant materials. It is the responsibility of the design team to ensure that these attractions are used to optimum advantage during site development. Inventory the physical properties of the site and determine which features are most conducive to the proposed development. Design should be adapted to utilize these features to the maximum extent. Existing plant materials should be incorporated into the proposed design whenever possible. This can be accomplished by laying out the proposed facility so that existing trees or shrubs are utilized in planting islands or natural areas. Existing trees and vegetation that are to be retained within the limits of the construction area should be cordoned off or fenced to prevent damage. Tree wells or retaining walls might also be used to protect the existing ground line of plant materials designated to be retained. In some cases, thinning of existing vegetation may be desirable. Fifty to sixty percent shade is more desirable and conducive to all activities. Dense shade is the least desirable. Thinning should include selective clearing of undesirable trees to allow unrestricted growth of young vigorous trees, especially hardwoods. If additional plants are required, they should be native species indigenous to the site or ornamental species that are growth zone compatible. These species should be low maintenance varieties and hardy to the area. The use of a tree spade to transplant trees from an adjacent site should also be considered. Facilities should be placed where desired grade already exists. If it is necessary to alter the grade of the site, it might be advantageous to remove and stockpile the topsoil from the area to be disturbed for use in restoration measures. Contoured earth berms should be considered in the landscape plans to enhance the aesthetic qualities of the site. Water courses or natural springs should be staked or fenced to prevent damage from contractor activities.

5-2. Vegetation Planting. The specific function or purpose of plants should be the basis for their use in a recreation design. Plants should not only be used for beautification, but should be used in solving environmental, management, and wildlife habitat concerns. The following is a guide for the use of plant materials in solving these problems.

a. Architectural. Closely spaced plants create walls and screens. Undesirable views, such as junk yards, service and storage areas, parking lots, garbage stations, electrical transformers, and many other negative features, can be screened with plants, berms, and/or architectural fences. Effective screens of plant materials and/or berms can also seclude activities such as sunbathing, camping, picnicking, or nature-watching. Proper selection and placement of plants must be considered for areas requiring security and surveillance.

b. Engineering. Trees, shrubs, ground cover, and turf may be used to control soil erosion. One such process, known as biotechnical soil protection, uses plants as major structural components, often in conjunction with traditional engineering techniques. The live vegetation is installed as

structural members. The various types of bioengineering systems provide immediate stabilization, while the shoots and roots develop to form a permanent vegetative cover and roots reinforce the soil. The systems use native plant material collected in the vicinity of the project to assure the material is well adapted to site conditions. The plants installed shall be members of the natural pioneer community which will act to stabilize and improve soil and prepare the site for the natural succession of a diverse plant community. Wind erosion can also be reduced by using plants as wind-breaks. Plant materials have also proven to have some effect in reducing noise. Noises associated with recreation activities such as swimming areas, playgrounds, and ballfields may be reduced by proper use of plant materials. Plants may be used to assist in controlling traffic, while adding to the visual quality of the environment. Properly placed plants can be used to control the traffic associated with bicycles, automobiles, motorcycles, pedestrians, and animals. Plants can many times be substituted for fences, chains, posts, and wires when used to control or direct traffic.

c. Climatological. Trees, shrubs, ground cover, and turf, or even a combination of these are effective in reducing direct as well as reflected solar radiation. They absorb heat, provide shade, and create dead air spaces. Plants can also control wind. Through techniques of placing plants, the wind can be controlled by obstruction, guidance, deflection, and filtration.

d. Aesthetic. Plants contribute to the aesthetics of a recreation area and provide visual relief from manmade structures. In an increasingly manmade world, plants are a welcome relief because of their diversity of form, color, and texture. Although plants are a three-dimensional element, their shadow, reflection) or silhouette may be more important aesthetically than the plant itself. As a three-dimensional object, the plant may be viewed as a sculptural element, viewed for its texture, naturalness, or color.

5-3. Vegetation Maintenance. Perhaps the most critical factor in designing for maintenance reduction is proper selection of plant materials. An incorrect choice of plants will cause increased maintenance. Native trees and shrubs should be selected if at all possible and then allowed to develop into their natural form without being altered by pruning or shearing. Through proper design and placement of plant materials maintenance can be greatly reduced. Spacing of trees and shrubs without regards to their mature size is a common problem in landscaping design. Many times young plants are located too close to structures, utilities, or walks and as the plant matures, pruning is required to control plant growth. Frequently, large trees are located under or too close to power lines and excessive trimming or complete removal is later necessary. Removal of snow from roads and parking areas is another factor which might influence placement of plant materials. Drifting of snow may occur from improper placement of certain plant material. Trees which drop messy fruit should be avoided in traffic areas or where they will cause increased maintenance. Existing vegetation that is diseased, damaged, or otherwise undesirable should be selectively removed. Use of salt for snow removal should be avoided. Salt residue can damage or kill plant materials.

a. Trees. The location and growth characteristics of trees can affect overall maintenance requirements. Tree spacing is a critical factor in mowing ease. Trees placed in open lawn areas might require hand trimming) or spacing between trees may prohibit access with large gang mowers. Proper selection of tree species may also reduce maintenance at a later date. The root structure of some trees lift sidewalks or damage asphalt paths and should be avoided. The size of leaves from some varieties may cause maintenance problems. Consideration should be given to providing irrigation systems to vegetation which requires additional water and is not located in an irrigated area.

b. Shrubs. Most of the design principals that apply to proper placement of trees likewise apply to initial location of shrubs. One of the most common errors is placing shrubs too close to buildings, walks, or paths causing continual pruning and other maintenance problems.

c. Ground Covers. Proper selection of ground cover species will determine the maintenance which will be required later. Wild flowers or other native plants and grasses should be used if suitable. A slow growing ground cover will leave bare spots and increase soil erosion, encourage foot traffic, and create excessive maintenance because of weeds. A good rule in ground cover design is to space hardy fast-growing plants so they will cover the site as quickly as possible. Long-lived species should be selected if possible.

d. Turf. Since mowing is the greatest time consuming maintenance activity associated with lawns, special attention should be given to design features which will reduce problems in this area. Do not create small patches of grass in hard-to-reach locations. Consideration should be given to creating natural or low maintenance areas such as unmown grasses or wild flowers. (See WES IR R-86-2.) Berms, curves, and slopes should be gentle to facilitate mowing. Slopes of 3-foot horizontal to 1-foot vertical (3H:1V) or flatter are recommended. Mowing strips, borders of brick or concrete set flush with the lawn and used to separate the planting areas from grass, will cut down on trimming. Edging material, such as metal, heavy plastic, or treated lumber, may also reduce the need for hand trimming and will control grass.

5-4. Erosion Control. Preventing soil erosion at newly developed and existing sites is a major concern throughout the Corps. Control measures must consider future maintenance requirements; for instance) the use of riprap in small drainage swales along access roads that are mowed should be avoided. Methods of controlling or minimizing soil erosion include:

- a. Plant materials as discussed above.
- b. Proper site grading.
- c. Retaining walls, riprap or terracing.
- d. Ditches or swales.
- e. Drainage structures.

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f. Erosion control blankets, fabrics and mesh materials.

g. Hay or straw mulch with asphalt emulsion.

5-5. Fire Protection. Selective pruning and clearing of dry brush and grasses and other locally approved methods of control should be considered in geographical areas prone to seasonal wild fires. Coordination with State and local fire control agencies should be undertaken.